REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed on December 23, 2005. Reconsideration and allowance of the application and present claims are respectfully requested. Claims 11, 18-21, 31-45 and 47-55 are pending and claims 11, 31, 39, 40, 42, 43, 44 and 47 are amended. Applicants should not be presumed to agree with any statements made regarding the rejections and objections made in the Office Action unless otherwise specifically indicated by the Applicants.

Claims 1-10, 12-17, 22-30, and 46 are canceled without prejudice, waiver, or disclaimer. Applicants take this action merely to reduce the number of disputed issues and to facilitate early allowance and issuance of other claims in the present application. Applicants reserve the right to pursue the subject matter of these canceled claims in a continuing application, if applicants so choose, and do not intend to dedicate any of the canceled subject matter to the public.

I.   Rejections under 35 U.S.C. § 103

Claims 11, 18-21, and 31-55 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,823,315 to *Bucci, et al.* in view of U.S. Patent No. 5,640,501 to *Turpin*. Applicants respectfully traverse this rejection on the grounds that *Bucci* in view of *Turpin* fails to disclose, teach or suggest each and every element of claims 11, 18-21, 31-45 and 47-55.

In order for a claim to be properly rejected under 35 U.S.C. §103, the teachings of the prior art reference must suggest all steps/elements/features of the claimed invention to one of ordinary skill in the art. *See, e.g., In re Dow Chemical*, 837 F.2d 469, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988); *In re Keller*, 642 F.2d 413, 208 U.S.P.Q. 871, 881 (C.C.P.A. 1981).

A.   Claim 11

Claim 11, as amended, recites:

> 11.   A computer-implemented method of building rules and constraints for a resource scheduling system within a call center, comprising:
> *displaying to a user a current rule fragment, such rule fragment comprising a blank space, wherein the current rule fragment is a portion of a completed rule used to generate a schedule for an employee within the call center*;
> filling said blank space of the current rule fragment with a value selected by said user, so as to create the completed rule, wherein the selected value comprises a value selected from a displayed list and a value that is entered directly;
> allowing a user to impose at least one self-referential constraint on the completed rule, wherein the at least one self-referential constraint is assignable to the employee to be scheduled;
> allowing a user to impose at least one self-referential tolerance on the completed rule; and
> generating the schedule for the employee within the call center based on the completed rule.

(Emphasis Added)

The Office Action indicates and Applicants respectfully agree that "*Bucci* does not specifically teach building the rules by displaying to a user a current rule fragment, such rule fragment comprising a blank space, and filling the blank space with a value selected by the user [so] as to create a completed rule, wherein the selected value comprises a value selected from a displayed list and a value that is entered directly." (Page 3 of the Office Action). In this regard, the Office Action uses *Turpin* in an attempt to remedy this deficiency of *Bucci*.

i.   <u>*Turpin* fails to disclose, teach or suggest the feature of "displaying to a user a current rule fragment, such rule fragment comprising a blank space, wherein the current rule fragment is a portion of a completed rule used to generate a schedule for an employee within the call center," as recited in claim 11</u>

In this regard, *Turpin* discloses a system and method for visually creating goal oriented electronic form applications having decision trees. A system for creating and completion of the electronic forms is also disclosed. The system creates a graphical image data file which defines: a graphical image of a form for display and printing; a graphical image of tree branches, tree nodes, and conclusions in association with fields of the form; reading and writing links between form fields and data sources and destinations; and links to other forms which, with the original form, comprise a related stack of forms. The system includes a form creation mode and a run time mode. The trees are defined by an application developer using the form creation mode to establish both qualitative and quantitative relationships between the various fields on the forms thereby providing the basis for the goal oriented prompting for the application user using the run time mode. (Abstract).

Turpin refers to a process for relating forms that are filled out by a user, anticipating a user's intended entry into a form, *etc*. <u>*Turpin* is not at all related to schedule generation, and completely lacks any reference to scheduling rules and constraints</u>. Nowhere does *Turpin* disclose, teach or suggest the feature of a "displaying to a user a current rule fragment, such rule fragment comprising a blank space, wherein the current rule fragment is a portion of a completed rule used to generate a schedule for an employee within the call center," as recited in claim 11

ii.   <u>The combination of *Bucci* and *Turpin* fails to disclose, teach, or suggest each and every element of claim 11</u>

Because *Bucci* and *Turpin* fail to disclose, teach, or suggest at least the above-emphasized features of claim 11, Applicants respectfully submit that the combination of *Bucci* and *Turpin* also fails to disclose, teach, or suggest each and every element of claim 11. Thus, a *prima facie* case of obviousness is not established based on *Bucci* and

Turpin. Consequently, for at least this reason, Applicants respectfully request that the rejection be withdrawn and claim 11 be allowed.

B.   Dependent Claims 18-21

Because independent claim 11 is allowable over the cited art of record, dependent claims 18-21 are allowable as a matter of law for at least the reason that dependent claims 18-21 contain all features recited in claim 11. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Accordingly, the rejection of dependent claims 18-21 should be withdrawn for at least this reason.

C.   Claim 31, 40, 44 and 47

Claim 31, as amended, recites:

> 31.   A method of optimizing a schedule for scheduling a plurality of agents within a call center, the method comprising:
> generating an initial schedule for the plurality of agents within the call center according to at least one rule, comprising,
> *displaying a current rule fragment that is a portion of a completed rule used to generate the initial schedule for the plurality of agents within the call center;*
> *accepting user input to create the completed rule from the rule fragment, wherein user input includes a selection from a displayed list, and a value directly entered by the user;*
> *accepting a tolerance input by the user, wherein the tolerance is placed on the completed rule;*
> *applying branching rules to previous user selections, such that future selection* lists may be generated based on the previous user selections; and
> converting the completed rule into an internal representation suitable for input into a resource scheduling system for generating the initial schedule;
> removing a shift from the initial schedule, thereby creating a shift-reduced schedule, wherein the shift comprises at least one agent, at least one time slot, and at least one break offset value, wherein the initial and shift-reduced schedules comprise a plurality of shifts assigning the plurality of agents to time slots and to break offset values;
> creating a plurality of possible schedules for the plurality of agents within the call center, the plurality of possible schedules

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including adding an array of different possible shifts individually to the shift-reduced schedule, wherein the possible shifts are break-unspecified shifts and have indeterminate break times;

evaluating a score function for each of the plurality of possible schedules, wherein the possible schedules have different possible shifts added, wherein the different possible shifts comprise all time slots in the schedule for which the plurality of agents can work;

selecting an improved schedule from among the plurality of possible schedules, wherein the improved schedule is characterized by an improved value of the score function; and

scheduling the plurality of agents within the call center in accordance with the improved schedule.
(Emphasis Added)

Claim 40, as amended, recites:

40.   A method of optimizing a schedule for scheduling a set of agents within a call center, the method comprising:

generating a preliminary schedule for the set of agents within the call center from an agent list, agent staffing requirements, and at least one rule specified by a user, including,

displaying a current rule fragment that is a portion of a completed rule used to generate the preliminary schedule for the set of agents within the call center;

accepting user input to create the completed rule from the rule fragment, wherein user input includes a selection from a displayed list, and a value directly entered by the user;

accepting a tolerance input by the user, wherein the tolerance is placed on the completed rule;

applying branching rules to previous user selections, such that future selection lists may be generated based on the previous user selections; and

converting the completed rule into an internal representation suitable for input into a resource scheduling system for generating the preliminary schedule, wherein the preliminary schedule comprises a plurality of shifts assigning the set of agents to slots and to break offset values;

removing from the preliminary schedule a first shift comprising a first agent of the set of agents;

responsive to removing the first shift from the preliminary schedule, generating a plurality of possible schedules having zero

or more different possible shifts added, wherein the different possible shifts comprise time slots in the plurality of possible schedules for which the first agent can work, and wherein the different possible shifts are break-unspecified shifts and have indeterminate break times;

　　　　evaluating a score function for each of the plurality of possible schedules based on the indeterminate break times;

　　　　selecting an improved schedule from among the plurality of possible schedules, wherein the improved schedule is characterized by an improved value of the score function; and

　　　　scheduling the set of agents in accordance with the improved schedule.

(Emphasis Added)

Claim 44, as amended, recites:

　　　　44.　　　A system for generating a schedule for a plurality of agents within a call center, comprising:

an interface system configured to generate at least one rule, the interface system comprising,

at least one display device configured to display a current rule fragment that is a portion of a completed used in generating a schedule for the plurality of gents within the call center,

at least one input device configured to receive user input to create the completed rule from the rule fragment, wherein user input includes,

a selection from a displayed list,

a value directly entered by a user,

at least one self-referential constraint imposed on the completed rule, wherein the at least one self-referential constraint is assignable to at least one agent of the plurality of agents to be scheduled within the call center; and

at least one self-referential tolerance imposed on the completed rule;

a processor configured to apply branching rules to previous user selections, such that future selection lists may be generated based on the previous user selections, and

a conversion processing element configured to convert the completed rule into an internal representation suitable for input into a resource scheduling system for

generating an initial schedule for the plurality of agents within the call center; and

a resource scheduling system configured to generate an optimized schedule from the initial schedule, including,

removing a shift from the initial schedule, thereby creating a shift-reduced schedule, wherein the shift comprises at least one agent, at least one time slot, and at least one break offset value, wherein the schedule comprises a plurality of shifts assigning the at least one agent of the plurality of agents to time slots and to break offset values;

creating a plurality of possible schedules for the plurality of agents, the plurality of possible schedules including adding an array of different possible shifts individually to the shift-reduced schedule, wherein the possible shifts are break-unspecified shifts and have indeterminate break times;

evaluating a score function for each of the plurality of possible schedules, wherein the possible schedules have different possible shifts added, wherein the different possible shifts comprise all time slots in the schedule for which the agent can work;

selecting an improved schedule from among the plurality of possible schedules, wherein the improved schedule is characterized by an improved value of the score function; and

scheduling the plurality of agents in accordance with the optimized schedule.

(Emphasis Added)

Claim 47, as amended, recites:

47.   A computer-readable medium, having instructions stored thereon, which when executed, cause at least one processor to:

generate an initial schedule for agents within a call center according to at least one rule, comprising,

displaying a current rule fragment that is a portion of a completed rule used to generate the initial schedule for the agents within the call center;

accepting user input to create the completed rule from the rule fragment, wherein user input includes a selection from a displayed list, and a value directly entered by a user;

accepting a tolerance input by the user;
applying branching rules to previous user
selections, such that future selection lists may be
generated based on the previous user selections; and
converting the completed rule into an internal
representation suitable for input into a resource scheduling
system for generating the initial schedule;
remove a shift from the initial schedule, thereby creating a
shift-reduced schedule, wherein the shift comprises at least one
agent, at least one time slot, and at least one break offset value,
wherein the schedule comprises a plurality of shifts assigning the
agents to time slots and to break offset values;
create a plurality of possible schedules for the agents within
the call center, including adding an array of different possible
shifts individually to the shift-reduced schedule, wherein the
possible shifts are break-unspecified shifts and have indeterminate
break times;
evaluate a score function for each of the plurality of
possible schedules, wherein the possible schedules have different
possible shifts added, wherein the different possible shifts
comprise all time slots in the schedule for which the agent can
work;
select an improved schedule from among the plurality of
possible schedules, wherein the improved schedule is characterized
by an improved value of the score function; and
schedule the agents in accordance with the improved
schedule.

(Emphasis Added)

The Office Action indicates and Applicants respectfully agree that "*Bucci* does

not teach accepting user input to create a completed rule from the rule fragment, wherein

user input includes a selection from a displayed list, and a value directly entered by the

user, the completed rule being assignable to at least one agent of the plurality of agents;

accepting a tolerance input by the user, wherein the tolerance is placed on the completed

rule; applying branching rules to previous user selections, such that future selection lists

may be generated based on the previous user selections." (Pages 5 and 8 of the Office

Action). In this regard, the Office Action uses *Turpin* in an attempt to remedy this

deficiency of *Bucci*.

i.   <u>*Turpin* fails to disclose, teach or suggest the feature of displaying</u> <u>a current rule fragment that is a portion of a completed rule used</u> <u>to generate a schedule for an employee within the call center, as</u> <u>recited in claim 31, 40, 44 and 47</u>

As mentioned above, *Turpin* discloses a system and method for visually creating goal oriented electronic form applications having decision trees. A system for creating and completion of the electronic forms is also disclosed. The system creates a graphical image data file which defines: a graphical image of a form for display and printing; a graphical image of tree branches, tree nodes, and conclusions in association with fields of the form; reading and writing links between form fields and data sources and destinations; and links to other forms which, with the original form, comprise a related stack of forms. The system includes a form creation mode and a run time mode. The trees are defined by an application developer using the form creation mode to establish both qualitative and quantitative relationships between the various fields on the forms thereby providing the basis for the goal oriented prompting for the application user using the run time mode. (Abstract).

Turpin refers to a process for relating forms that are filled out by a user, anticipating a user's intended entry into a form, *etc*. <u>*Turpin* is not at all related to</u> <u>schedule generation, and completely lacks any reference to scheduling rules and</u> <u>constraints</u>. Nowhere does *Turpin* disclose, teach or suggest the feature of displaying a current rule fragment that is a portion of a completed rule used to generate a schedule for an employee within the call center, as recited in claim 31, 40, 44 and 47.

ii.   <u>The combination of *Bucci* and *Turpin* fails to disclose, teach, or</u> <u>suggest each and every element of claims 31, 40, 44 and 47</u>

Applicants respectfully submit that *Bucci* and *Turpin* also fail to teach the feature of accepting user input to create the completed rule from the rule fragment. The user input includes a selection from a displayed list, and a value directly entered by a user. In addition, Applicants respectfully submit that *Bucci* and *Turpin* also fail to teach the feature of accepting a tolerance input by the user and applying branching rules to

previous user selections, such that future selection lists may be generated based on the previous user selections.

Because *Bucci* and *Turpin* fail to disclose, teach, or suggest at least the above-emphasized features of claims 31, 40, 44 and 47, Applicants respectfully submit that the combination of *Bucci* and *Turpin* also fails to disclose, teach, or suggest each and every element of claims 31, 40, 44 and 47. Thus, a *prima facie* case of obviousness is not established based on *Bucci* and *Turpin*. Consequently, for at least this reason, among others, Applicants respectfully request that the rejection be withdrawn and claims 31, 40, 44 and 47 be allowed.

D. Dependent Claims 32-39, 42-43, 45 and 48-55

Because independent claims 31, 40, 44 and 47 are allowable over the cited art of record, dependent claims 32-39, 42-43, 45 and 48-55 are allowable as a matter of law for at least the reason that dependent claims 32-39, 42-43, 45 and 48-55 contain all features and elements of their respective independent base claim. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Accordingly, the rejection to dependent claims 32-39, 42-43, 45 and 48-55 should be withdrawn for at least this reason, among others.

CONCLUSION

Any other statements in the Office Action that are not explicitly addressed herein are not intended to be admitted. In addition, any and all findings of inherency are traversed as not having been shown to be necessarily present. Furthermore, any and all findings of well-known art and official notice, or statements interpreted similarly, should not be considered well known for at least the specific and particular reason that the Office Action does not include specific factual findings predicated on sound technical and scientific reasoning to support such conclusions.

Applicants respectfully maintain that the currently pending claims are in condition for allowance. Should the Examiner have any comments or suggestions that would place the subject patent application in better condition for allowance, she is respectfully requested to telephone the undersigned attorney at (770) 933-9500.

Respectfully submitted,

Minh N. Nguyen, Reg. No. 53,864

THOMAS, KAYDEN,
  HORSTEMEYER & RISLEY, L.L.P.
Suite 1750
100 Galleria Parkway N.W.
Atlanta, Georgia 30339
(770) 933-9500